Regal Rexnord
Powertrain Solutions

POWERTRAIN SOLUTIONS

CUSTOMER SUCCESS STORY

Wastewater

$136,460
FIRST YEAR SAVINGS

$29,460
RECURRING SAVINGS

Wastewater Facility Achieves 5-Month Payback Period with Drop-In Replacement

THE CUSTOMER:

A large municipal wastewater facility manages many complexities and applications, with minimal staff to do so. In the facility, they have Rotating Biological Contactor (RBCs), clarifiers, pumps, sludge tanks, and more, which all require frequent maintenance and monitoring to ensure the plant meets the demands of the community. The customer was looking to replace worn out equipment for their sludge tanks.

THE CHALLENGE:

This process is very mature, having been designed and installed decades ago, and many of the components have since been obsoleted. The process is continuous, scraping the bottom of the tank to remove solids and convey it out of the tank, which is then dried and output as fertilizer or waste. Typically, each tank has 3 multi-axis scrapers that require up to 3 output shafts, all with chain drives, motors, and gearboxes running at different speeds. Given the harsh environment of the application, reliability and long-term durability were at the top of the customer's priority list.

Due to the age of the design and components, the customer was having trouble finding replacement parts. They decided to partner with Regal Rexnord to find a new complete solution for their sludge tank.

THE REGAL REXNORD SOLUTION:

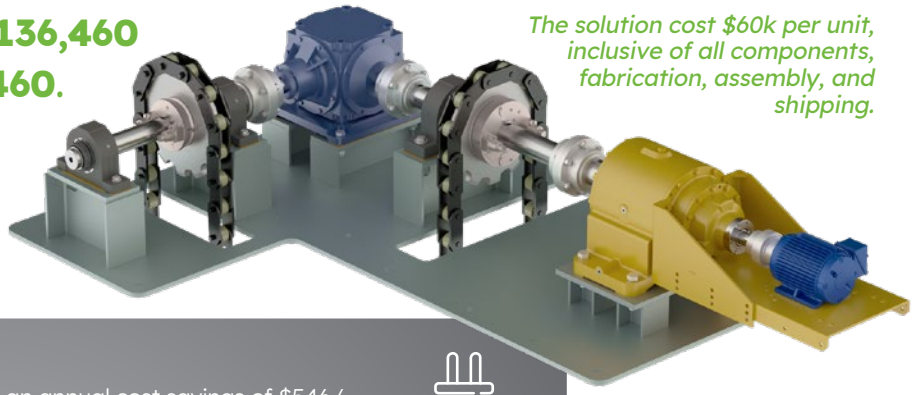
The team at Regal Rexnord designed a new custom Powertrain solution that comprised of the entire drive as a drop-in replacement. This complete solution utilized the wide breadth of the Regal Rexnord portfolio, and our Powertrain Solutions team designed, fabricated, and installed the components, including Falk Couplings™, Rexnord™ Planetgear™ gearboxes, Leeson™ motors, Hub City™ bevel gearboxes, Ameridrives™ shafts, Sealmaster™ bearings, Rexnord™ chain and sprockets, and custom bedplates.

The municipal wastewater facility objectives for the new design were:

- ***Drop-in replacement*** *form and fit to minimize the modifications to the existing structure.*
- ***Increase in the efficiency*** *of the design to increase output of the tank and minimize operating costs.*
- ***Maximize the life*** *of the components and minimize the required maintenance.*

Grand Total First Year Savings **$136,460**
Ongoing annual savings of **$29,460**.

The key from a performance perspective was to match the exact position, speed, and torque to sync with the existing chain drives, allowing for a drop-in replacement and leading to the following customer benefits:



The solution cost $60k per unit, inclusive of all components, fabrication, assembly, and shipping.

Annual Energy Savings: $5,460 Annually

- Reduced electrical energy consumption by 6.4%, for an annual cost savings of $546/unit/year.
- Given a typical mid-sized municipal water treatment plant has 10 tanks in operation, this means total $5,460 saved annually.

One-time capital savings: $107,000

- Reduced shipping and logistics costs by having a single supplier.
- Capital savings amounted to $107,000 total for 10 units, an 18% cost reduction compared to creating the solution on their own.

Annual Maintenance Savings: $24,000

- Reduced number of lost productivity hours by 240 man-hours annually by eliminating quarterly maintenance, leading to an additional $24,000 in annual cost savings
- One point of accountability for troubleshooting and after sales support with optimized system designed with long-term durability.

Environmental Benefit

- Reduced the risk for potential failures with a robust design and the high quality and performance of the Regal Rexnord portfolio, meaning less dirty water making it back into the ecosystem from discharge water not being cleansed properly.
- A poorly functioning system can output toxins that cause the plant to fail government inspection, costing thousands in fines and hurting their stance in the community.

Based on the following assumptions:

- Routine maintenance requires 240 man hours
- Average maintenance cost per hour is $34
- Average municipal water treatment center has ten units

Footnotes:

- 5.9% in motor efficiency improvement, 0.5% in gearbox improvement
- ROI: $60k per unit (inclusive of all components, fabrication, assembly, and shipping)
- The design ($25,000), fabrication ($5000/unit) and assembly ($3000/unit) work cost savings include third party consulting, custom fabrication and on-site installation and shipping ($2000/10 units). $107k

You have challenges.
We have solutions.

When you partner with Regal Rexnord, you get with a **trusted global company** with **local resources**, **reputable brands**, and a **proven history** of delivering cost-efficient solutions.

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Regal Rexnord
Customer Service: 800-626-2120 | Technical Service: 800-626-2093
powertrain@regalrexnord.com

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